HISTORIC PROPERTY INVENTORY FORM

State of Washington, Department of Community Development
Office of Archaeology and Historic Preservation
111 21st Avenue Southwest, Post Office Box 48343
Olympia, Washington 98504-8343 (206)753-4011

IDENTIFICATION SECTION

Field Site No. 284-E **OAHP No.** _____ **Date Recorded** 1 April 1996
Site Name Historic Power House Revised 17 July 1997
Common Steam Plant
Field Recorder M.S. Gerber
Owner's Name U.S. Department of Energy, Richland Operations Office
Address P.O. Box 550
City/State/Zip Code Richland, WA 99352

Status

- [x] Survey/Inventory
- [ ] National Register
- [ ] State Register
- [ ] Determined Eligible
- [ ] Determined Not Eligible
- [ ] Other (HABS, HAER, NHL)
- [ ] Local Designation

Photography
Hanford Photography Lab: Neg. #94070043-27 CN
Photography Neg. No. (Roll No. & Frame No.) HCRL: Roll 272, frames 21-27
View of All exterior facades
Date July 1994 and 10 July 1997

Photo at right: #94070043-27 CN
View of west and north facades

Classification [ ] District [ ] Site [x] Building [ ] Structure [ ] Object
District Status [x] NR [ ] SR [ ] LR [ ] INV
Contributing [x] **Non-Contributing** [ ]
District/Thematic Nomination Name Hanford Site Manhattan Project and Cold War Era Historic District

LOCATION SECTION

Address Building 284-E, 200 East Area
City/Town/County/Zip Code Richland/Benton County/99352
Twp 12 N **Range** 26 E **Section** 3 **I/4 Section** SE **1/4 1/4 Sec** SE
Tax No./Parcel No. _____ **Acreage** _____
Quadrangle or map name Gable Butte, Washington - 7.5 min. series 1986
UTM References Zone 11 **Easting** _____ **Northing** _____
Plat/Block/Lot _____
Supplemental Map(s) _____

Description Section

Materials & Features/Structural Types

Building Type Industry
Plan Modified Rectangular
Structural System Steel Frame/Concrete Block
No. of Stories Three

Roof Type

- [ ] Gable
- [x] Flat
- [ ] Monitor
- [ ] Gambrel
- [ ] Shed
- [ ] Hip
- [ ] Pyramidal
- [ ] Other (specify) _____

Cladding (Exterior Wall Surfaces)

- [ ] Log
- [ ] Horizontal Wood Siding
  - Rustic/Drop [ ]
  - Clapboard [ ]
- [ ] Wood Shingle
- [ ] Board and Batten
- [ ] Vertical Board
- [ ] Asbestos/Asphalt
- [ ] Brick
- [ ] Stone
- [ ] Stucco
- [ ] Terra Cotta
- [x] Concrete/Concrete Block
- [ ] Vinyl/Aluminum Siding
- [ ] Metal (specify) _____
- [ ] Other (specify) _____

Roof Material

- [ ] Wood Shingle
- [ ] Wood Shake
- [ ] Composition
- [ ] Slate
- [x] Tar/Built-up
- [ ] Tile
- [ ] Metal (specify) _____
- [x] Other (specify) Precast Concrete
- [ ] Not visible

Foundation

- [ ] Log
- [ ] Post & Pier
- [ ] Stone
- [ ] Brick
- [ ] Not visible
- Concrete
  - [ ] Block
  - [x] Poured
  - [ ] Other (specify) _____

Integrity (Include detailed description in **Description of Physical Appearance**)

	Intact	Slight	Moderate	Extensive
Changes to plan			x	
Changes to windows		x		
Changes to original cladding	x			
Changes to interior			x	
Other (specify)				

High Styles/Forms (Check one or more of the following)

- [ ] Greek Revival
- [ ] Gothic Revival
- [ ] Italianate
- [ ] Second Empire
- [ ] Romanesque Revival
- [ ] Stick Style
- [ ] Queen Anne
- [ ] Shingle Style
- [ ] Colonial Revival
- [ ] Beaux Arts/Neoclassical
- [ ] Chicago/Commercial Style
- [ ] American Foursquare
- [ ] Mission Revival
- [ ] Spanish Colonial Revival/Mediterranean
- [ ] Tudor Revival
- [ ] Craftsman/Arts & Crafts
- [ ] Bungalow
- [ ] Prairie Style
- [ ] Art Deco/Art Moderne
- [ ] Rustic Style
- [ ] International Style
- [ ] Northwest Style
- [ ] Commercial Vernacular
- [ ] Residential Vernacular (see below)
- [x] Other (specify) Industrial Vernacular

Vernacular House Types

- [ ] Gable Front
- [ ] Gable Front and Wing
- [ ] Side Gable
- [ ] Cross Gable
- [ ] Pyramidal/Hipped
- [ ] Other (specify) _____

NARRATIVE SECTION

Study Unit Themes (check one or more of the following)

[ ] Agriculture	[ ] Conservation	[ ] Politics/Government/Law
[ ] Architecture/Landscape Architecture	[ ] Education	[ ] Religion
[ ] Arts	[ ] Entertainment/Recreation	[ ] Science & Engineering
[ ] Commerce	[ ] Ethnic Heritage (specify) _____	[ ] Social Movements/Organizations
[ ] Communications	[ ] Health/Medicine	[ ] Transportation
[ ] Community Planning/Development	[ ] Manufacturing/Industry	[x] Other (specify) Manhattan Project and Cold War Eras
	[ ] Military	[x] **Study Unit Sub-Theme(s)** Chemical Separations, Facilities Support (Infrastructure); Power Distribution

Statement of Significance

Date of Construction 1944 Architect/Engineer/Builder E.I. du Pont de Nemours Corporation

[x] In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.

[x] In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).

The 284-E Power House was built during World War II to supply power to steam turbine pumps for the heating and process needs of 200 East Area buildings. Overhead lines (2802-E Structures) conveyed the steam throughout the 200 East Area. Many pieces of heavy industrial equipment, machinery, and industrial processes in the 200 Areas were powered by steam. In 1954, the building received a large addition to accommodate the needs of the large PUREX (plutonium uranium extraction) plant being built just east of the Power House. During 1995-96, studies showed that the 200 East Area's steam needs could be met with more modern, efficient, portable steam generators, as many of the Area's larger facilities were being shut down. As a result, the Power House was abandoned in 1997. By providing power and heat to significant chemical separations facilities and surrounding buildings, the 284-E Power House played an important supporting role in the missions of the 200 East Area. It is therefore the conclusion of the U.S. Department of Energy that Building 284-E is eligible for inclusion in the National Register of Historic Places under Criterion A as a contributing property within the Hanford Site Manhattan Project and Cold War Era Historic District.

Description of Physical Appearance

The 284-E Power House is a five-story, steel frame building, originally measuring 73 feet (east-west) by 156 feet (north-south). The building has three roof levels of 70 feet, 58 feet, and 27 feet in height. The building has a concrete foundation, concrete block superstructure and a precast concrete roof surfaced with built-up felt, tar, gravel, and Transite roofing. The building is entirely aboveground except for sluice trenches and piping. The facility consists of the main power house building; two reinforced concrete stacks; a coal handling conveyor system, including two track hoppers, a crusher house, and two transfer houses; an open coal storage pit; and a salt dissolving pit, including a brine pump house. The operating floor of the Power House is a reinforced concrete slab located 14 feet above the ground that surrounds three steam boilers. Each boiler was fired by a spreader-type stoker with dumping grates. Each grate was 23.5 feet wide by 16 feet deep, and is divided in five sections, each having its own fuel distributor or feeder. Operating controls and gauges of the boilers are located on panel boards opposite the fire doors of the boilers. Above the operating floor are intermediate and top platforms consisting of structural steel supports and steel grating stairways and walkways to afford access to the upper regions of the boilers and the stoking equipment. The 284-E Building has numerous roof ventilators, adjustable wooden louvers along the side walls, and three steel, rolling, overhead doors located at each end of the building. At the south end, on the ground floor, were a locker room, shower room, lavatory, electrical switchgear cabinets, and an open area. A small laboratory also is located on the ground floor. On the upper operating floor are offices, a lavatory, a conference room, and a battery room. The boilers are connected to two reinforced concrete-lined stacks by means of four outside steel breechings, two breechings running to each stack. The stacks are 250 feet tall and 23 feet at the base tapering to nine feet at the top. The stacks are located approximately 20 feet from the Power House. At the base of each stack was an ash disposal system which was connected to the main sluice system beneath the Power House.

Within the Power House, approximately 67 feet above the ground floor, was the conveyor platform which consisted of a reinforced concrete floor with steel gratings supported by steel beams. A conveyor ran the entire length of the building on steel rails to three large bunkers. Another conveyor belt was installed above the stoker hoppers under the bunkers for the transfer of coal from any bunker to any stoker. The conveyor system originally consisted of two underground track hoppers, a crusher house, two transfer houses and connecting houses elevating the coal from beneath the tracks to the coal pit and to the 67-foot high platform above the coal bunkers about 800 feet away. The track hoppers were constructed of reinforced concrete. The transfer houses and belt housing are constructed of steel framing with corrugated Transite walls and roof and wooden plank flooring. They are supported by structural steel piers embedded in concrete foundations.

The crusher house is a three-story (including a below grade level), reinforced concrete base, structural steel frame building with corrugated Transite walls and roof. This building housed two double-roll crushers with receiving hoppers on the top floor. The crushers themselves were on the ground floor, and the conveyor belt mechanism was beneath the crushers. A small coal testing laboratory was located on one end of the crusher house. The coal storage area located by the crusher house was roughly rectangular in shape with its base six feet below grade. It is 310 feet by 350 feet, and its area is enclosed by an earthen dike and reinforced concrete wall to a height of nine feet above the ground. A reinforced concrete brine pump house is located beside the pit and houses brine pumping equipment.

During 1953-1954, the 284-E Power House was expanded to the north to accommodate the needs of the large new PUREX production facility. The new addition was constructed of metal sheeting with a corrugated metal roof. The addition is 66.4 feet long, bringing the total building length to 220.4 feet and the area to 68,000 square feet. Two boilers were added during the expansion, and another boiler was added in 1984 bringing the current total to six boilers.

Major Bibliographic References

Carr P.S., Jr. 1958. *Completion Report of 200 Area Facilities* . HW-24800-105. General Electric Hanford Company, Richland, Wasington.

Drawings H-255306, H-2-55400, H-2-55401, H-2-55403, H-2-55405, H-2-55510, H-2-55518, and H-2-77895.

E.I. du Pont de Nemours Corporation. 1945. *Construction of Hanford Engineer Works: History of the Project* . HAN-10970. Wilmington, Delaware.

U.S. Atomic Energy Commission/General Electric Hanford Company. 1964. *Catalog of Hanford Site Buildings and Facilities* . GEH-26434. Richland, Washington.